Cybersecurity

Bachelor of Science (B.S.) – Catalog Year 2026-2027

PROGRAM OVERVIEW

The Cybersecurity professional is an individual that must be prepared to apply his or her knowledge and skills for online security in order to defense computers, servers, mobile devices, electronic systems, networks, users and data from malicious attacks. The Bachelor of Science in cybersecurity at CU Denver will prepare students for careers in security engineering, security analysis, cybersecurity law, security architecture, cybersecurity sales, secure web development, secure system development and many other diverse careers that rely on cybersecurity as a form of protection and preparation.

The Program Educational Objectives of the undergraduate cybersecurity program are to produce graduates who:

- Analyze a complex computing and security problem and apply algorithmic reasoning to identify solutions.
- Design, implement, and evaluate a computing-based solution to meet a given set of computing and security requirements.
- Communicate and function effectively in professional contexts and teams.
- Make informed judgements in computing and security practices based on legal and ethical principles.
- Apply security principles and practices to maintain operations in the presence of threats.

ACADEMIC ADVISING

Students admitted to the College of Engineering, Design and Computing (CEDC) who have declared a major should to meet with an advisor in their specific department and should contact that department to schedule an appointment.

Computer Science & Engineering
ComputerScience@ucdenver.edu
Visit the academic advising website here
1380 Lawrence Street Center, 8th Floor
303-315-1408

GENERAL GRADUATION REQUIREMENTS & POLICIES

All College of Engineering, Design and Computing (CEDC) students are required to complete the following minimum general graduation requirements:

1. Complete a minimum of 120 credit hours.
2. Achieve a minimum 2.0 grade point average (GPA) for all courses attempted, for all required courses and for all courses taken within the student's major department.
3. Complete all CU Denver Core, CEDC, and major requirements.
4. Complete a minimum of 30 credit hours as a declared CEDC student in good standing at CU Denver.
5. Complete at least the final two semesters as an enrolled CEDC student.

PROGRAM REQUIREMENTS & POLICIES

The following program requirements are based on degree requirements for the current Catalog year at CU Denver and are subject to change. Students are responsible for completing degree requirements based on the Catalog year for which they are admitted.

Students are responsible for meeting with the major/faculty advisor in the department to confirm major requirements. Student completing the Cybersecurity B.S. degree are required to complete the following minimum program requirements:

1. Complete 24 credit hours of **CU Denver Core Curriculum coursework**.
2. Complete 7 credit (at minimum) hours of **math** (Calculus I and Statistics).
3. Complete 8 credit hours of natural or **physical sciences**.
4. Complete 31 credit hours of **core computer science courses**.
5. Complete 32 credit hours of **core cybersecurity courses**.
6. Complete 15 credit hours of **cybersecurity breadth electives**.
7. Complete 3 credit hours of **engineering design**.

COURSEWORK THAT CAN BE COMPLETED AT PREVIOUS INSTITUTION

The following is a "bucket" of requirements students can complete prior to transferring to CU Denver, including equivalent Colorado Community College System (CCCS) courses. To determine the equivalencies of non-computer science courses to be completed at non-CU Denver institutions, students can visit https://transferology.com/school/ucdenver. **It is critical students connect with a CU Denver academic advisor to ensure planned courses will transfer *and* apply to CU Denver degree requirements.** All non-CU Denver coursework must be completed with a C- or better to be eligible for transfer.

Students interested in completing an Associate (A.A. or A.S.) Degree or a Colorado Statewide Transfer Articulation Agreement or Degree with Designation (DWD) must work with their community/junior college academic advisor to create an academic plan that accounts for all degree or transfer articulation agreement requirements. Colorado Community College Students may also explore the option to complete Reverse Transfer at CU Denver.

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CU Denver Requirements	CU Denver Credits	CCCS Equivalent Courses & Notes	CCCS Credits
CU Denver Core Curriculum Requirements	24		
ENGL 1020 – Core Composition I	3	ENG 1021	3
ENGL 2030 – Core Composition II	3	ENG 1022	3
Arts	3	GT-AH	3
Humanities	3	GT-AH or GT-HI	3
Behavioral Sciences	3	GT-SS	3
Social Sciences	3	GT-SS or GT-HI*	3
International Perspectives	3	Additional GT-AH, HI, SS* *(see note below)*	3
Cultural Diversity	3	*To be completed at CU Denver. This requirement must be completed with an upper-division course and CCCS courses will not apply.*	
Required Mathematics Courses	7		
MATH 1401 Calculus I	4	*GT-MA1 (MAT 2410)*	5
MATH 2830 Introductory Statistics	3	MAT 1260 (Statistics)	5
Required Science	8	Any two of the following: BIO 1111, BIO 1112, CHE 1111, CHE 1112, PHY 1111, PHY 1112, PHY 2111 or PHY 2112	10
Computer Science Core	7		
CSCI 1410/1411 Fundamentals of Computing with lab	4	CSC 1060	4
CSCI 2312 Object-Oriented Programming	3	CSC 1061 only IF taught in C++	4
Total Hours			49

*The applicability of Guaranteed Transfer (GT Pathways) courses to specific CU Denver Core Curriculum requirements requires completion of a block of five courses: two GT-AH courses; one GT-HI course; one GT-SS course; and one additional GT-AH, GT-HI, or GT-SS course.

SAMPLE PLAN – COURSEWORK TO BE COMPLETED AT CU DENVER

Based on successful completion of applicable transfer credits and the complete "bucket" of requirements outlined above, students would have the following remaining to complete at CU Denver. At CU Denver, students must tailor this plan based on the evaluation of previously completed college coursework (e.g., AP, IB, CLEP, dual/concurrent enrollment, and transfer credit), course availability, individual preferences related to course load, summer term courses, part-time or full-time student status, or add-on programs such as minors or double-majors.

Students deviating from this plan must fulfill course prerequisites and must meet with the faculty advisor in their department to confirm degree requirements. Students intending to transfer to CU Denver to pursue a Cybersecurity B.S. degree should note the following:

1. The College of Engineering, Design and Computing has a competitive admissions process. Students may be admitted to CU Denver but not the College of Engineering, Design and Computing. Such students may work with CU Denver's Academic Success and Advising Center to identify an alternative major and/or program of study.
2. Colorado Community College students should transfer to CU Denver once they have met the College of Engineering, Design and Computing's admission requirements. They should not necessarily complete an associate's degree.

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YEAR ONE

Semester 1	CRS
ENGR 1200 FUND. OF ENGINEERING DESIGN INNOVATION	3
CSCI 1510 LOGIC DESIGN	3
CSCI 2421 DATA STRUCTURES & PROGRAM DESIGN	3
CSCI 2511 DISCRETE STRUCTURES	3

Semester 2	CRS
CSCI 2525 ASSEMBLY LANGUAGE & COMPUTER ORG.	3
CSCI 3287 DATABASE SYSTEMS	3
CSCY 2930 PRACTICAL SYSTEMS ADMINISTRATION	2
CSCI 3761 INTRODUCTION TO COMPUTER NETWORKS	3

YEAR TWO

Semester 3	CRS
CSCY 4741 PRINCIPLES OF CYBER SECURITY	3
CSCI 3412 ALGORITHMS	3
CSCY 3740 COMPUTER SECURITY	3
CU CORE CULTURAL DIVERSITY	3

Semester 4	CRS
CSCY 4742 CYBER SECURITY PROGRAMMING AND ANALYSIS	3
CSCY 4743 CYBER & INFRASTRUCTURE DEFENSE	3
CSCI 3453 OPERATING SYSTEMS	3
CSCY ELECTIVE	3

YEAR THREE

Semester 5	CRS
CSCY 4738 SENIOR DESIGN I	3
CSCY 4772 MOBILE & IOT SECURITY	3
CSCY 3765 SECURE NETWORK & SYSTEMS PROGRAMMING	3
CSCY ELECTIVE	3
CSCY ELECTIVE	3

Semester 6	CRS
CSCY 4738 SENIOR DESIGN II	3
CSCY 4407 SECURITY & CRYPTOGRAPHY	3
CSCY 4950 CYBERSECURITY RISK ANALYSIS & MANAGEMENT	3
CSCY ELECTIVE	3
CSCY ELECTIVE	3

Total Hours at CU Denver: 77